

BLYTH'S TRAGOPAN *TRAGOPAN BLYTHII* (JERDON 1870)
IN EASTERN NAGALAND: PEOPLES' PERCEPTION

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A questionnaire survey was done in five eastern districts of Nagaland to collate information on Blyth's Tragopan *Tragopan blythii* (Jerdon 1870), the State Bird of Nagaland, during April 2009 to December 2010. Surveys were conducted in 269 villages, and in each village 4–5 elderly persons (*Gaunburas*), and hunters were interviewed to collect information on the occurrence, status, ecology and peoples' perception on Blyth's Tragopan in their forests. An attempt was made to compare the indigenous ecological knowledge pertaining to this species with that reported in literature. Inhabitants of 83 of the 269 villages surveyed, reported the presence of Blyth's Tragopan in their forests; in 25% of the villages, this species was not uncommon and in 27% of the villages, tragopans have locally disappeared. Information on the ecology of this species provided by locals and that in literature was similar. The study revealed that most of the villagers are aware of the decline of biodiversity in their area. Several villages have earmarked Community Conservation Areas (CCAs, which are community protected reserves) and banned hunting of wildlife, including Blyth's Tragopan. It was found that most of the CCAs require technical support with respect to wildlife conservation strategies and alternate livelihood options for the local people. This species appears to be common in a few localities in Kiphere district of Nagaland, and an in-depth ecological study is suggested, which would provide data required to develop long-term conservation plans for this species in the region.

Key words: Blyth's Tragopan, Community Conservation Area, conservation, northeast India, pheasants

INTRODUCTION

Blyth's Tragopan *Tragopan blythii* (Jerdon 1870) is distributed in India, Bhutan, Myanmar, and parts of China; in India, it is restricted to the forested hill tracts of northeast India (BirdLife International 2008; Ghose *et al.* 2003). The estimated global population of this species varies from 2,500–10,000 birds, and its density may vary from 0.56 to 4.3 birds/sq. km (BirdLife International 2008). Its estimated population in Nagaland is 400 (Zeliang 1980). It is reported that Blyth's Tragopan is declining owing to widespread forest degradation and hunting pressure in parts of its distributional range (Choudhury 2001; Islam and Rahmani 2004). Due to small, declining and scattered sub-populations within a severely fragmented range and hunting pressure, this species is categorised as Vulnerable by IUCN (BirdLife International 2008). In India, it is accorded the highest legal protection subsequent to its listing in Schedule I of the Indian Wildlife (Protection) Act, 1972.

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(NEPED), Kohima, has been working in the eastern districts of Nagaland since 2007. A major objective of this study was to strengthen the efforts of local communities in conserving natural resources, including wildlife. As part of this study, we documented the indigenous knowledge on flora and fauna, data on occurrence, status, and peoples' perception of Blyth's Tragopan, the State bird of Nagaland. In the present paper, we attempt to compare the knowledge of locals pertaining to this species with that reported in literature.

MATERIAL AND METHODS

Study Area

Northeast India, which is a part of the Indo-Myanmar faunal sub-region, is one of the 34 global biodiversity hotspots (Myers *et al.* 2000). Nagaland (25° 06'–27° 04' N; 93° 20'–95° 15' E) is one of the north-eastern states of the Indian Union. The study was conducted in five eastern districts of the state, namely Phek, Tuensang, Mon, Kiphere, and Longleng. The entire area is hilly with elevation ranging between 194 and 3,842 m above msl, the highest peak being Saramati (3,842 m above msl) in Kiphere district. Monthly

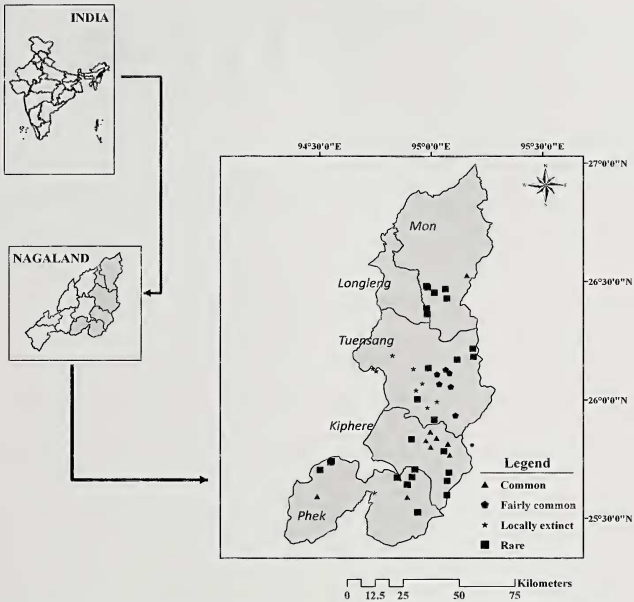


Fig. 1: Eastern districts of Nagaland showing current distribution of Blyth's Tragopan based on a questionnaire survey

mean temperature of the area ranged from 16 °C to 31 °C and in a few locations it may drop to about 4 °C during December and January. Eastern Nagaland receives rains primarily during June–September and the average annual rainfall of the area ranges from 2,000 to 2,500 mm. The major indigenous tribes inhabiting the district are Chang, Sangtam, Khiamungan, Yimchunger, Sumi, Konyak, Pochuri, Chakhesang and Phom, and all of them are reported to be originally hunter gatherers (Ganguli 1984; Joshi 2001; Sanyu 2008). *Jhum* or slash and burn cultivation is the most common agricultural practice found in these districts.

Field Methods

A questionnaire survey was done in the villages of the five districts of Nagaland from April 2009 to December 2010. As one of the major goals of the SACON-NEPED project

was to encourage locals to establish community conservation areas, surveys were restricted to villages with considerable forest cover, 269 villages of the 464 villages of the districts. About 4–5 elderly persons, *Gaumburas* and hunters were interviewed in each village, and information on the occurrence, status, ecology, and peoples' perception of Blyth's Tragopan inhabiting their forests was recorded. Interviews with villagers were conducted by a local resource person known as Facilitator of Community Conservation (FCC) in the presence of at least one of the authors of this paper. The FCCs are local village youths trained by SACON-NEPED in biodiversity conservation, and they played a crucial role in liaising with the villagers. In all, the services of 29 FCCs were utilised during this study. Photographs of Blyth's Tragopan (male and female) were shown to villagers during the interview. Location (latitude-longitude) of most of the

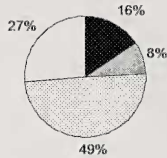
villages was recorded using a GPS (12 Channel, Garmin). Based on the statements of the locals, population status of the species was categorised as common, fairly common, rare, and locally extinct. Sightings/calls 10+ times by a person in one year was considered as common, 5–10 as fairly common and <5 as rare, and the status categorisation of the bird was done following consensus among persons interviewed in the village. Birds not seen/heard in an area by villagers for more than five years were considered as locally extinct. Information provided by people on Blyth's Tragopan was compared with that available in literature such as Ali and Ripley (2001) and BirdLife International (2008).

RESULTS

The presence of Blyth's Tragopan was reported to occur in the recent past (namely, within 5–10 years) in 83 (31%) of 269 villages sampled (Table 1). This species is known in 14 local (dialect) names, and local names such as *Wühthürang* (Langa dialect, Yimchunger tribe, Tuensang and Kihere districts, 18 villages) and *Uhgngang* (Sangtam dialect, Sangtam tribe, Tuensang district, 14 villages) are widely used.

The status and distribution of Blyth's Tragopan in the five eastern districts of Nagaland is shown in Figure 1. Tuensang had the highest number of villages that reported this species; none of the 24 villages interviewed in Longleng district reported it. The tragopan was somewhat common in about 25% of villages, and in 22 (27%) villages it had disappeared (Fig. 2). Among the 22 villages with no recent reports of tragopan, 21 were in Tuensang district (Table 1). In 13 villages, tragopans were reportedly common; of these, 10 were in Kiphere district.

In general, it appears that Blyth's Tragopan is rare in the eastern districts of Nagaland. A comparative account of published information on aspects of its ecology and that reported by the indigenous people of eastern Nagaland is provided in Table 2. This study revealed that Blyth's Tragopan is distributed in a wide range of elevation, i.e., 600–2,800 m above msl in the eastern districts of the state. Of the 83 villages



■ Common □ Fairly Common □ Rare □ Locally Extinct

Fig. 2: Status of Blyth's Tragopan in 83 villages of the eastern districts of Nagaland with a recent history of its occurrence

with tragopan reports, 67 (80.8%) were located above >1,000 m above msl. The highest number of villages with the report of this species was located >1,800 m above msl followed by 1,400–600 m above msl category (Fig. 3). All villages where the Blyth's Tragopan was reported common were found at elevations of 1,100–2,200 m above msl. Eighty out of eighty-three villages which reported Blyth's Tragopan informed that this species inhabits primary forests. According to the local Nagas, these undisturbed primary evergreen have never been under *jhum* cultivation. In 33 locations, this species was observed in secondary forests, i.e., *jhum* lands left unattended for over 15 years.

Locals reported that the Blyth's Tragopan feeds on many species of flower buds, berries, fruits, and seeds. People of 58 villages reported fruits as a major food of this species, 53 villages considered seeds and grains as its food, and inhabitants of 23 villages thought that this species also feeds on insects. People of 66 villages reported that tragopans breed during March–June. Seventeen villages reported that this species did not breed in their forests since nests were not located. People of four villages said that this species nests in forests above 2,000 m above msl and 12 villagers reported that they breed in primary (evergreen) forests. People of 13 villages reported that it nests on the ground in tropical evergreen forests.

Table 1: Status of Blyth's Tragopan in the eastern districts of Nagaland based on questionnaire survey

| District | Villages surveyed | Positive response | Status | | | |
|----------|-------------------|-------------------|-----------------|------|---------------|--------|
| | | | Locally Extinct | Rare | Fairly Common | Common |
| Tuensang | 75 | 35 | 21 | 7 | 7 | 0 |
| Phek | 59 | 21 | 1 | 18 | 0 | 2 |
| Mon | 73 | 12 | 0 | 11 | 0 | 1 |
| Kiphere | 38 | 15 | 0 | 5 | 0 | 10 |
| Longleng | 24 | 0 | 0 | 0 | 0 | 0 |
| Total | 269 | 83 | 22 | 41 | 7 | 13 |

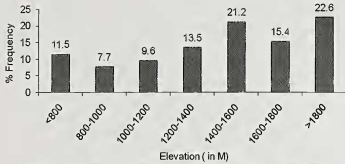


Fig. 3: Distribution of Blyth's Tragopan in various altitudinal categories of eastern Nagaland based on questionnaire survey; number of villages surveyed=269, villages with some information on Tragopan=83

Inhabitants of all villages reported that the population of Blyth's Tragopan is declining due to over exploitation (hunting) and deforestation. They also believed that deforestation brings the bird to open habitats, which makes them victims of predators and hunters. Of the 83 villages, in 58 villages tragopan feathers were used for decorative display in houses as a sort of hunter's trophy. People of 73 villages reported that they hunted Blyth's Tragopan for food, using airguns (49 villages) and traditional methods, such as snares and catapult (28 villages). People of all the 83 sampled villages were aware of the decline of Blyth's Tragopan in their area. Among the 83 villages with some information on tragopans, 76 villages have declared about 250 Community Conservation Areas (CCAs). CCA is a patch of forest owned and managed by a village. A village may have many CCAs. The size of these protected forest patches varies from a few hectares to about 10 sq. km. Self imposed ban on hunting wild animals is in place in most of the CCAs, including specific resolution to protect Blyth's Tragopan in villages such as Washelo (Tuensang district), Iponger (Kiphire), Angphang and Yakshu (Mon).

DISCUSSION

The study reported 14 local (dialect) names for the Blyth's Tragopan. The usage of numerous local names

for this and several other species in this region could be due to isolation of villages for so many years due to their remoteness and animosity among communities. Head hunting was reportedly prevalent among Nagas till 1965 (Ganguli 1984). Among 83 villages with information on the species, 22 villages reported local extinction and it was reported as rare in another 41 villages (Table 1). This indicates that the status of Blyth's Tragopan in eastern Nagaland is rare and declining, which confirms the reports at global level (BirdLife International 2008).

The Blyth's Tragopan was reported to occur between 600 and 2,800 m above msl, which is wider than the reported elevation range (1,400–3,300 m above msl) of this species (BirdLife International 2008). Choudhury (1997, 2001) reported that the lowermost elevation range of this species in Nagaland is 1,400 m above msl. Reported occurrence of this species at lower elevations (600 m above msl) by locals indicates its potential occurrence in much lower elevations; further ground surveys are required to confirm this. Most of the villagers reported primary forests as the habitat of Blyth's Tragopan, which is similar to that reported in literature (Ali and Ripley 2001; Choudhury 2001; Ghose *et al.* 2003). This study also reported the occurrence of this species in a few secondary forests, which is similar to observations by Choudhury (1997, 2001) and Ghose *et al.* (2003).

Some of the information on the ecology of Blyth's Tragopan provided by local communities of eastern Nagaland was consistent with that found in literature (Table 2, Ali and Ripley 2001; BirdLife International 2008; Choudhury 2001; Ghose *et al.* 2003, 2007). Several villagers reported that this species breeds during March–June, which is close to that found in literature (April–May). Several villagers said that tragopans did not breed in their areas, and that it is possible that this species nests at higher elevations and locally move to lower elevations seasonally. In this regard, reports by four villages that this species nests in forests found above 2,000 m above msl is notable, as information on the nest of free ranging birds of this species is not available (Ali and Ripley 2001).

Table 2: Comparison of peoples' view and that found in literature on Blyth's Tragopan

| Information | Peoples' views | Published information |
|---------------|---|--|
| Habitat | Primary forests (evergreen forests) | Subtropical, temperate and evergreen forests |
| Elevation (m) | 600–2,800 | 1,400–3,300 |
| Diet | Seeds, berries, fruits, and buds, insects | Seeds, berries, fruits, and buds |
| Breeding | March–June | April–May |
| Nesting | Nesting on ground in tropical evergreen forests | No nests have been found in the wild |
| Threat | Overexploitation (hunting) and deforestation | Deforestation, primarily as a result of shifting cultivation |

The study revealed that most of the villagers are aware of the decline of biodiversity, including of the Blyth's Tragopan, in their region. Many of them showed interest in conserving them, and several villages have created CCAs and banned hunting of wildlife within the protected forest patches. As the forest patches are owned by the locals, conservation of biodiversity involving local communities would be the best possible option. Most CCAs require technical support regarding conservation strategies and alternate livelihood options.

This study has shown that the Blyth's Tragopan is distributed in most parts of the eastern districts of Nagaland, and a systematic survey is suggested to assess the status of this species in Nagaland. Literature survey shows that available information on the ecology of this species is scanty. Since the species appears to be common in Kiphre district of Nagaland, and ecological studies in this area are also suggested as it would provide pertinent ecological information for planning species conservation

strategies. This study also highlights the in-depth indigenous ecological knowledge of the people of eastern Nagaland.

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REFERENCES

- ALI, S. & S.D. RIPLEY (2001): Handbook of the Birds of India and Pakistan. Vol. 2. Oxford India Paperbacks, Oxford University Press, Delhi. Pp. 84–86.
- BIRDLIFE INTERNATIONAL (2008): *Tragopan blythii*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. www.iucnredlist.org. Downloaded on March 22, 2012.
- CHOUDHURY, A.U. (1997): New localities for Blyth's Tragopan from Nagaland. *WPA News* 52: 13–15.
- CHOUDHURY, A.U. (2001): Some bird records from Nagaland, north-east India. *Forktail* 17: 91–103.
- GANGULI, M. (1984): A Pilgrimage to the Nagas. Oxford & IBH Publishing Co, New Delhi. Pp. 275.
- GHOSE, D., R. KAUL & G.K. SAHA (2003): Status survey of the Blyth's Tragopan in Blue Mountain National Park, Mizoram, India using call-count technique. *Current Science* 84(1): 95–97.
- GHOSE, D., P. LOBO, S. RAJESH & A.U. CHOUDHURY (2007): Status, Distribution and Management of Galliformes in Manipur, Nagaland and Mizoram. Pp. 143–147. In: Sathyakumar, S. & K. Sivakumar (Eds): Galliformes of India. ENVIS Bulletin: Wildlife and Protected Areas Vol. 10(1). Wildlife Institute of India, Dehradun, India.
- ISLAM, M.Z. & A.R. RAHMANI (2004): Important Bird Areas in India: Priority sites for conservation. Indian Bird Conservation Network: Bombay Natural History Society and Birdlife International, UK. Pp. xviii+1133.
- JOSHI, H. (2001): Nagaland: Past and Present. Akansha Publishing House, New Delhi. Pp. 180.
- MYERS N., R.A. MITTERMEIER, C.A. MITTERMEIER, G.A.B. DA FONSECA & J. KENT (2000): Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858.
- SANYU, V. (2008): A History of Nagas and Nagaland. Commonwealth Publishers, New Delhi, India. Pp. 162.
- ZELIANG, D.K. (1980): Blyth's Tragopan breeding centre, Kohima Nagaland. Pp. 88–91. In: Savage, C.W.D. (Ed.): Pheasants in Asia 1979. Proceedings of the First International Symposium of Pheasants in Asia, Kathmandu. World Pheasant Association, London.

